1.Microsoft Windows :

Windows operating system was first released in 1985 by Microsoft company.Windows 7 is a version of this. It is a representative of MS-DOS with  a graphical user interface (GUI).

The first versions of Windows (1.0 through to 3.11) were actually just programs run from MS-DOS which then took over the screen and launched an application called [Program Manager](https://en.wikipedia.org/wiki/Program_Manager); later on, [Windows 95](https://en.wikipedia.org/wiki/Windows_95), though still being based on MS-DOS, was its own operating system, using a [16-bit](https://en.wikipedia.org/wiki/16-bit) DOS-based kernel and a [32-bit](https://en.wikipedia.org/wiki/32-bit) [user space](https://en.wikipedia.org/wiki/Userland_(computing)).

Windows 95 introduced many staple features that remain in current versions of Windows today, including the [Start menu](https://en.wikipedia.org/wiki/Start_menu), the [taskbar](https://en.wikipedia.org/wiki/Taskbar), and [Windows Explorer](https://en.wikipedia.org/wiki/Windows_Explorer) (renamed File Explorer in Windows 8). In 1997, Microsoft released [Internet Explorer 4](https://en.wikipedia.org/wiki/Internet_Explorer_4) which included the (at the time) controversial [Windows Desktop Update](https://en.wikipedia.org/wiki/Windows_Desktop_Update), which aimed to integrate Internet Explorer and the [web](https://en.wikipedia.org/wiki/World_Wide_Web) into the user interface and also brought many new features into Windows, such as the ability to display [JPEG](https://en.wikipedia.org/wiki/JPEG) images as the desktop wallpaper and single window navigation in Windows Explorer, all of which still exist in Windows today.

Todays Windows OS is highly organized.  A number of new features like [Cortana](https://en.wikipedia.org/wiki/Cortana_(software)), the [Microsoft Edge](https://en.wikipedia.org/wiki/Microsoft_Edge) web browser, the ability to view Windows Store apps as a window instead of fullscreen, virtual desktops, revamped core apps, Continuum, and a unified Settings app were all features debuted in Windows 10.  Microsoft has announced that Windows 10 will be the last major version of its series of operating systems to be released. Instead, Microsoft will release major updates to the operating system via download or in [Windows Update](https://en.wikipedia.org/wiki/Windows_Update), similar to the way updates are delivered in [macOS](https://en.wikipedia.org/wiki/MacOS).

2.Ubuntu: Ubuntu is currently funded by **Canonical Ltd.** On 8 July 2005, Mark Shuttleworth and**Canonical** announced the creation of the Ubuntu Foundation and provided an initial funding of US$10 million. The purpose of the foundation is to ensure the support and development for all future versions of Ubuntu.

**Ubuntu** ([/ʊˈbuːntʊ/](https://en.wikipedia.org/wiki/Help:IPA_for_English) [*uu-****BOON****-tuu*](https://en.wikipedia.org/wiki/Help:Pronunciation_respelling_key), stylized as **ubuntu**)[[11]](https://en.wikipedia.org/wiki/Ubuntu_(operating_system)#cite_note-11) is a [Debian](https://en.wikipedia.org/wiki/Debian)-based [Linux](https://en.wikipedia.org/wiki/Linux) [operating system](https://en.wikipedia.org/wiki/Operating_system) for [personal computers](https://en.wikipedia.org/wiki/Personal_computer), [tablets](https://en.wikipedia.org/wiki/Tablet_computers) and [smartphones](https://en.wikipedia.org/wiki/Smartphone), where [Ubuntu Touch](https://en.wikipedia.org/wiki/Ubuntu_Touch) edition is used. It also runs [network servers](https://en.wikipedia.org/wiki/Network_servers). That is usually with the Ubuntu Server [edition](https://en.wikipedia.org/wiki/Ubuntu_variants), either on [physical](https://en.wikipedia.org/wiki/Physicalization) or [virtual](https://en.wikipedia.org/wiki/Virtual_machine) servers (such as on [mainframes](https://en.wikipedia.org/wiki/Mainframe)) or with [containers](https://en.wikipedia.org/wiki/Operating-system-level_virtualization), that is with enterprise-class features. It runs on the most popular architectures, including server-class ARM-based.

A [default](https://en.wikipedia.org/wiki/Default_(computer_science)) installation of Ubuntu contains a wide range of software that includes [LibreOffice](https://en.wikipedia.org/wiki/LibreOffice), [Firefox](https://en.wikipedia.org/wiki/Mozilla_Firefox), [Thunderbird](https://en.wikipedia.org/wiki/Mozilla_Thunderbird), [Transmission](https://en.wikipedia.org/wiki/Transmission_(BitTorrent_client)), and several lightweight games such as [Sudoku](https://en.wikipedia.org/wiki/Sudoku) and [chess](https://en.wikipedia.org/wiki/GNOME_Chess).[[38]](https://en.wikipedia.org/wiki/Ubuntu_(operating_system)#cite_note-38)[[39]](https://en.wikipedia.org/wiki/Ubuntu_(operating_system)#cite_note-39) Many additional software packages are accessible from the built in [Ubuntu Software Center](https://en.wikipedia.org/wiki/Ubuntu_Software_Center) as well as any other [APT](https://en.wikipedia.org/wiki/Advanced_Packaging_Tool)-based [package management](https://en.wikipedia.org/wiki/Package_management) tools. Many additional software packages, such as [Evolution](https://en.wikipedia.org/wiki/Evolution_(software)), [GIMP](https://en.wikipedia.org/wiki/GIMP), [Pidgin](https://en.wikipedia.org/wiki/Pidgin_(software)), and [Synaptic](https://en.wikipedia.org/wiki/Synaptic_(software)), that are no longer installed by default, are still accessible in the repositories, installable with the built in [Ubuntu Software Center](https://en.wikipedia.org/wiki/Ubuntu_Software_Center); or by any other [APT](https://en.wikipedia.org/wiki/Advanced_Packaging_Tool)-based [package management](https://en.wikipedia.org/wiki/Package_management) tool and Snappy.

Ubuntu operates under the [GNU General Public License](https://en.wikipedia.org/wiki/GNU_General_Public_License) (GPL) and all of the application software installed by default is free software. In addition, Ubuntu installs some hardware drivers that are available only in binary format, but such packages are clearly marked in the restricted component.[[40]](https://en.wikipedia.org/wiki/Ubuntu_(operating_system)#cite_note-40)

Ubuntu's goal is to be secure "out-of-the box". By default, the user's programs run with [low privileges](https://en.wikipedia.org/wiki/Principle_of_least_privilege) and cannot corrupt the operating system or other users' files. For increased security, the [sudo](https://en.wikipedia.org/wiki/Sudo) tool is used to assign temporary privileges for performing administrative tasks, which allows the [root account](https://en.wikipedia.org/wiki/Root_account) to remain locked and helps prevent inexperienced users from inadvertently making catastrophic system changes or opening security holes.[[41]](https://en.wikipedia.org/wiki/Ubuntu_(operating_system)#cite_note-41) [PolicyKit](https://en.wikipedia.org/wiki/PolicyKit) is also being widely implemented into the desktop. Most network ports are closed by default to prevent hacking.[[42]](https://en.wikipedia.org/wiki/Ubuntu_(operating_system)#cite_note-42) A built-in firewall allows end-users who install network servers to control access. A [GUI](https://en.wikipedia.org/wiki/GUI) ([GUI for Uncomplicated Firewall](https://en.wikipedia.org/wiki/Uncomplicated_Firewall#GUIs_for_Uncomplicated_Firewall)) is available to configure it.[[43]](https://en.wikipedia.org/wiki/Ubuntu_(operating_system)#cite_note-43) Ubuntu compiles its packages using [GCC](https://en.wikipedia.org/wiki/GNU_Compiler_Collection) features such as [PIE](https://en.wikipedia.org/wiki/Position-independent_code) and [buffer overflow protection](https://en.wikipedia.org/wiki/Buffer_overflow_protection) to [harden](https://en.wikipedia.org/wiki/Hardening_(computing)) its software.[[44]](https://en.wikipedia.org/wiki/Ubuntu_(operating_system)#cite_note-44) These extra features greatly increase security at the performance expense of 1% in [32-bit](https://en.wikipedia.org/wiki/X86) and 0.01% in [64-bit](https://en.wikipedia.org/wiki/X86-64).[[45]](https://en.wikipedia.org/wiki/Ubuntu_(operating_system)#cite_note-45)

Ubuntu also supports full disk encryption[[46]](https://en.wikipedia.org/wiki/Ubuntu_(operating_system)#cite_note-46) as well as encryption of the home and Private directories.

3.Android: The development of Android started in 2003 by Android, Inc., which was purchased by Google in 2005. Alpha was the first version of android released in November 5, 2007. The first commercial version, Android 1.0, was released in September 2008. Android is continually developed by [Google](https://en.wikipedia.org/wiki/Google) and the [Open Handset Alliance](https://en.wikipedia.org/wiki/Open_Handset_Alliance), and it has seen a number of [updates](https://en.wikipedia.org/wiki/Patch_(computing)) to its base operating system since the initial release.

Android is used to smartphones nowadays all around the world.Today a wide range of android apps are available in play store.It gives Support for third-party virtual keyboards with text prediction and user dictionary for custom words, miniature application views that can be embedded in other applications (such as the Home screen) and receive periodic updates, Video recording and playback in [MPEG-4](https://en.wikipedia.org/wiki/MPEG-4) and 3GP formats, Rearranged notification shade, Night Light, Touch/display performance improvements, Moves (Fingerprint swipe down gesture – opt-in), Seamless A/B system updates, Daydream VR mode etc.

With the change of time,many of development progress in it’s feture is happening.New features are being added everyday. Some features of android are App shortcuts/shortcut manager APIs,

Circular app icons support, Keyboard image insertion, Fingerprint sensor gesture to open/close notification shade, Manual storage manager Intent for apps, Fingerprint sensor gesture to open/close notification shade, Improved VR thread scheduling, Enhanced wallpaper metadata etc. The main hardware platform for Android is the [ARM architecture](https://en.wikipedia.org/wiki/ARM_architecture) ([ARMv7](https://en.wikipedia.org/wiki/ARMv7) and [ARMv8-A](https://en.wikipedia.org/wiki/ARMv8-A) architectures; formerly also ARMv5), with [x86](https://en.wikipedia.org/wiki/X86)[[c]](https://en.wikipedia.org/wiki/Android_version_history#cite_note-237) and [MIPS](https://en.wikipedia.org/wiki/MIPS_architecture)[[d]](https://en.wikipedia.org/wiki/Android_version_history#cite_note-239) architectures also officially supported in later versions of Android. Android used to require an [autofocus](https://en.wikipedia.org/wiki/Autofocus) camera, which was relaxed to a [fixed-focus](https://en.wikipedia.org/wiki/Fixed-focus_lens) camera[[245]](https://en.wikipedia.org/wiki/Android_version_history#cite_note-android-compatibility-249) if present at all, since the camera was dropped as a requirement entirely (except for smartphones) when Android started to be used on [set-top boxes](https://en.wikipedia.org/wiki/Set-top_box).

4.Fedora: **Fedora**  (formerly **Fedora** Core) is a Unix-like computer **operating system** based on the Linux kernel and GNU programs, developed by the community-supported**Fedora** Project and sponsored by Red Hat. As of February 2016, Fedora has an estimated 1.2 million users,[[8]](https://en.wikipedia.org/wiki/Fedora_(operating_system)#cite_note-8) including [Linus Torvalds](https://en.wikipedia.org/wiki/Linus_Torvalds), creator of the Linux kernel.

Fedora has a reputation for focusing on innovation, integrating new technologies early on and working closely with [upstream](https://en.wikipedia.org/wiki/Upstream_(software_development))Linux communities.[[11]](https://en.wikipedia.org/wiki/Fedora_(operating_system)#cite_note-11) Making changes upstream instead of specifically in Fedora ensures that the changes are available to all [Linux distributions](https://en.wikipedia.org/wiki/Linux_distribution).

Fedora has a relatively short life cycle: version X is supported only until 1 month after version X+2 is released and with approximately 6 months between most versions, meaning a version of Fedora is usually supported for at least 13 months, possibly longer.[[12]](https://en.wikipedia.org/wiki/Fedora_(operating_system)#cite_note-Fedora_Release_Life_Cycle-12) Fedora users can upgrade from version to version without reinstalling.[[13]](https://en.wikipedia.org/wiki/Fedora_(operating_system)#cite_note-FedUp-13)[[14]](https://en.wikipedia.org/wiki/Fedora_(operating_system)#cite_note-Fedora_Project-14)The default [desktop environment](https://en.wikipedia.org/wiki/Desktop_environment) in Fedora is [GNOME](https://en.wikipedia.org/wiki/GNOME) and the default user interface is the [GNOME Shell](https://en.wikipedia.org/wiki/GNOME_Shell). Other desktop environments, including [KDE Plasma](https://en.wikipedia.org/wiki/KDE_Plasma_5), [Xfce](https://en.wikipedia.org/wiki/Xfce), [LXDE](https://en.wikipedia.org/wiki/LXDE), [MATE](https://en.wikipedia.org/wiki/MATE_(desktop_environment)) and [Cinnamon](https://en.wikipedia.org/wiki/Cinnamon_(user_interface)), are available and can be installed.

Fedora comes installed with a wide range of software such as [LibreOffice](https://en.wikipedia.org/wiki/LibreOffice) and [Firefox](https://en.wikipedia.org/wiki/Firefox). Additional software is available from the [software repositories](https://en.wikipedia.org/wiki/Software_repository) and can be installed using the [DNF](https://en.wikipedia.org/wiki/DNF_(software)) package manager or [GNOME Software](https://en.wikipedia.org/wiki/GNOME_Software).[GNOME Software](https://en.wikipedia.org/wiki/GNOME_Software), Fedora's default package manager front-end

Additionally, extra repositories can be added to the system, so that software not available in Fedora can be installed more readily.[[19]](https://en.wikipedia.org/wiki/Fedora_(operating_system)#cite_note-f20instguide-19):9.8.1.Software that is not available via official Fedora repositories, either because it doesn't meet Fedora's definition of [free software](https://en.wikipedia.org/wiki/Free_software) or because its distribution may violate US law, can be installed using third-party repositories. Popular third-party repositories include [RPM Fusion](https://en.wikipedia.org/wiki/RPM_Fusion) free and non-free repositories. Fedora also provides users with an easy-to-use build system for creating their own repositories called Copr.

### 5.Mac OS X:MAC OS X was first released in 1999 as [Mac OS X Server 1.0](https://en.wikipedia.org/wiki/Mac_OS_X_Server_1.0), with a widely released desktop version—[Mac OS X 10.0](https://en.wikipedia.org/wiki/Mac_OS_X_10.0)—following in March 2001 by apple company. Since then, several more distinct desktop and server editions of macOS have been released. Starting with [Mac OS X 10.7 Lion](https://en.wikipedia.org/wiki/Mac_OS_X_Lion), [macOS Server](https://en.wikipedia.org/wiki/MacOS_Server) is no longer offered as a separate operating system; instead, server management tools are available for purchase as an add-on. Starting with the [Intel](https://en.wikipedia.org/wiki/Apple%E2%80%93Intel_architecture) build of [Mac OS X 10.5 Leopard](https://en.wikipedia.org/wiki/Mac_OS_X_10.5_Leopard), most releases have been certified as Unix systems conforming to the [Single Unix Specification](https://en.wikipedia.org/wiki/Single_Unix_Specification).

### macOS has retained the major version number 10 throughout its development history to date; releases of macOS have also been named after [big cats](https://en.wikipedia.org/wiki/Big_cats) (versions 10.0–10.8) or locations in [California](https://en.wikipedia.org/wiki/California) (10.9–present).Different version of this os have been published such as Kodiak, Cheetah(10.0), Puma(10.1), Jaguar(10.2), Panther(10.3), Tiger(10.4), Leopard(10.5), Snow Leopard(10.6)etc. High Sierra(10.13) was released in june 5 ,2017. With the development of Operating system many features has been added in the os.

### Mac OS is the computer [operating system](http://searchcio-midmarket.techtarget.com/definition/operating-system) for Apple Computer's [Macintosh](http://searchcio-midmarket.techtarget.com/definition/Macintosh) line of personal computers and workstations. A popular feature of its latest version, Mac [OS X](http://whatis.techtarget.com/definition/OS-X) , is a [desktop](http://searchwinit.techtarget.com/definition/desktop) interface with some [3-D](http://whatis.techtarget.com/definition/3-D-three-dimensions-or-three-dimensional) appearance characteristics. OS X has a modular design intended to make it easier to add new features to the operating system in the future. It runs [UNIX](http://searchenterpriselinux.techtarget.com/definition/Unix) applications as well as older Mac applications. OS X, also Mac OS X, is the Unix-based graphical interface operating system developed by Apple Inc. to exclusively power every Mac computer. It's engineered to make the utmost of what the hardware is capable of and to deliver the most intuitive and comprehensive computer experience in the world.

6.Google Chrome OS: **Chrome OS**. **Chrome OS** is an **operating system** designed by**Google** that is based on the Linux kernel and uses the **Google Chrome** web browser as its principal user interface. ... The first **Chrome OS** laptop, known as a **Chromebook**, arrived in May 2011. Chrome OS is quite pretty, but where did Google's Linux desktop did come from? Here is its story.The actual origin of Chrome OS, even now, is unclear. [Jeff Nelson, a former Google engineer, claimed that he created a "a new operating system" that "was originally code-named 'Google OS](http://blog.jeff-nelson.com/2012/11/on-inventing-chromebook.html)' and since 2009 has been released to the public under the product names, Google Chrome OS, Chromebook, and Chromebox." For proof, Nelson points to his patent, granted later, for [network-based operating system across devices](http://www.google.com/patents/US8239662).

In April 2012, Google made the first update to Chrome OS's user interface since the operating system had launched, introducing a hardware-accelerated window manager called "Aura" along with a conventional taskbar. The additions marked a departure from the operating system's original concept of a single browser with tabs and gave Chrome OS the look and feel of a more conventional desktop operating system. "In a way, this almost feels as if Google is admitting defeat here", wrote Frederic Lardinois on TechCrunch. He argued that Google had traded its original version of simplicity for greater functionality. "That’s not necessarily a bad thing, though, and may just help Chrome OS gain more mainstream acceptance as new users will surely find it to be a more familiar experience."[[25]](https://en.wikipedia.org/wiki/Chrome_OS#cite_note-TechCrunch:_new_UI-25)

7.Elementary OS:

**elementary OS** is a [Linux distribution](https://en.wikipedia.org/wiki/Linux_distribution) based on [Ubuntu](https://en.wikipedia.org/wiki/Ubuntu_(operating_system)). It is the flagship distribution to showcase the **Pantheon** [desktop](https://en.wikipedia.org/wiki/Desktop_environment).

The elementary OS distribution initially started as a set of [themes](https://en.wikipedia.org/wiki/Theme_(computing)) and applications designed for Ubuntu which later turned into its own Linux distribution.[[7]](https://en.wikipedia.org/wiki/Elementary_OS#cite_note-AskVG-21) Being Ubuntu-based, it is compatible with its [repositories](https://en.wikipedia.org/wiki/Software_repository) and packages and uses Ubuntu's own [software center](https://en.wikipedia.org/wiki/Ubuntu_Software_Center) to handle installation/removal of software. Its [user interface](https://en.wikipedia.org/wiki/User_interface) aims at being intuitive for new users without consuming too many resources.[[8]](https://en.wikipedia.org/wiki/Elementary_OS#cite_note-weblogit-22)

elementary OS is based on Ubuntu's Long Term Support releases, which its developers actively maintain for bugs and security for years even as development continues on the next release.[[9]](https://en.wikipedia.org/wiki/Elementary_OS#cite_note-23)[[10]](https://en.wikipedia.org/wiki/Elementary_OS#cite_note-Softpedia_Loki_release-24)

elementary OS founder Daniel Foré has said that the project is not designed to compete with existing open source projects but to expand their reach. The project also seeks to create open

source jobs through developer bounties placed on specific development tasks. As of the 2016 Loki release, US$17,500 had been raised in bounties.[[11]](https://en.wikipedia.org/wiki/Elementary_OS#cite_note-Linux.com_Loki-25)

8.Debian: [The Debian Project](http://www.debian.org/) is a worldwide group of volunteers who endeavor to produce an operating system distribution that is composed entirely of free software. The principle product of the project to date is the Debian GNU/Linux software distribution, which includes the Linux operating system kernel, and thousands of prepackaged applications. Various processor types are supported to one extent or another, including 32 and 64 bit x86, ARM, MIPS, PowerPC and IBM S/390.

Debian has access to online repositories that contain over 50,000 [software packages](https://en.wikipedia.org/wiki/Package_(package_management_system))[[9]](https://en.wikipedia.org/wiki/Debian#cite_note-9) making it the largest software compilation.[[10]](https://en.wikipedia.org/wiki/Debian#cite_note-measuring-lenny-10) Debian officially contains only free software, but non-free software can be downloaded and installed from the Debian repositories.[[11]](https://en.wikipedia.org/wiki/Debian#cite_note-packages-11) Debian includes popular free programs such as [LibreOffice](https://en.wikipedia.org/wiki/LibreOffice),[[12]](https://en.wikipedia.org/wiki/Debian#cite_note-12) [Firefox](https://en.wikipedia.org/wiki/Firefox) web browser, [Evolution](https://en.wikipedia.org/wiki/Evolution_(software)) mail, [K3b](https://en.wikipedia.org/wiki/K3b) disc burner, [VLC media player](https://en.wikipedia.org/wiki/VLC_media_player), [GIMP](https://en.wikipedia.org/wiki/GIMP) image editor, and [Evince](https://en.wikipedia.org/wiki/Evince) document viewer.[[11]](https://en.wikipedia.org/wiki/Debian#cite_note-packages-11) Debian is a popular choice for [web servers](https://en.wikipedia.org/wiki/Web_server) (cf. [LAMP](https://en.wikipedia.org/wiki/LAMP_(software_bundle))).

he Debian project handles security through [public disclosure](https://en.wikipedia.org/wiki/Full_disclosure_(computer_security)) rather than through [obscurity](https://en.wikipedia.org/wiki/Security_through_obscurity). Debian security advisories are compatible with the [Common Vulnerabilities and Exposures](https://en.wikipedia.org/wiki/Common_Vulnerabilities_and_Exposures) dictionary, are usually coordinated with other free software vendors and are published the same day a vulnerability is made public. There used to be a security audit project that focused on packages in the stable release looking for security bugs;[[]](https://en.wikipedia.org/wiki/Debian#cite_note-225) Steve Kemp, who started the project, retired in 2011 but resumed his activities and applied to rejoin in 2014.

9.DOS: When IBM launched its revolutionary personal computer, the IBM PC, in August 1981, it came complete with a 16-[bit](http://www.linfo.org/bit.html) operating system from Microsoft, MS-DOS 1.0. This was Microsoft's first operating system, and it also became the first widely used operating system for the IBM PC and its [clones](http://www.linfo.org/clone.html).

The primary feature of DOS is to load data and programs from external sources and bring them into the internal memory so they can be used on the computer. DOS also enables the computer to perform input and output operations such as displaying images on the screen and it also controlsother external devices such as the printer and controls what is send to the printer. It also controls input for external devices such as the keyboard or mouse or other sources such as a scanner or external hard drive. The DOS system will also store any data that is collected during use such as anything that is saved, downloaded, edited and stored.

The DOS operating system is the system that takes control over the whole machine and essentially makes the computer work and perform the programs we wish to use. The operating system manages both the hardware and the software that the computer has and allows us to control external devices or use external devices to control the computer.

10. BackTrack: **BackTrack**. **BackTrack** was a Linux distribution that focused on security, based on the Knoppix Linux distribution aimed at digital forensics and penetration testing use. In March 2013, the Offensive Security team rebuilt **BackTrack** around the Debian distribution and released it under the name Kali Linux.

Applications contained in the distributions Backtack collection consists of many applications such as security testers; application security testers LAN, WIFI, WAN, Web Application security testing, application security testing applications like reverse enginering etc.. very much at all to the point that I confused myself to learn to use it.

Backtrack is suitable for the systems analyst in charge of maintaining security of information systems both in the form of application, network or website. if used by people who are "less responsible" backtrack could turn into a very terrible. imagine if the network systems and applications your company penetrated using this distro, and then the necessary data is stolen or manipulated. Reflecting the above illustration, it's good for IT professionals who happen to have a job as a Security maintainer learn to understand and use the Backtrack distro.